

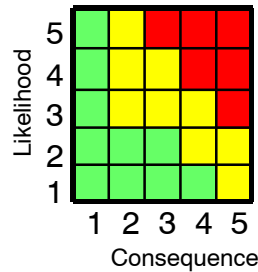
# FIGURE 5-1

## SSP RISK MANAGEMENT SCORECARD



10/13/04

| Likelihood Rating |                                                                                                                                                             |
|-------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>5</b>          | <b>Very Likely: <math>\sim 10^{-1}</math></b><br>Expected to happen in the life of the program.                                                             |
| <b>4</b>          | <b>Likely: <math>\sim 10^{-2}</math></b><br>Could happen in the life of the program. Controls have significant limitations or uncertainties.                |
| <b>3</b>          | <b>Possible: <math>\sim 10^{-3}</math></b><br>Could happen in the life of the program. Controls exist, with some limitations or uncertainty.                |
| <b>2</b>          | <b>Unlikely: <math>\sim 10^{-4}</math></b><br>Could happen in the life of the program, but not expected. Controls have minor limitations or uncertainties.  |
| <b>1</b>          | <b>Highly Unlikely: <math>\sim 10^{-5}</math></b><br>Extremely remote possibility that it will happen in the life of the program. Strong controls in place. |



### Identify and Assess Risk

#### 1. Start with a Concern. Is this a program risk?

- What information is available? Gather information: requirements status, problem data, trends, hazards, critical item history, etc.

#### 2. Define Risk Statement.

- Given the condition (A), there is a possibility that (B) will occur.

(A) - Single phrase briefly describing current key circumstances, situations, etc. that are causing concern, doubt, anxiety, or uncertainty

(B) - Consequences, or impacts of the current conditions, that could be realized due to (A)

#### 3. Define the Consequences (B). Locate the most accurate description(s) among the Safety, Mission Success, Supportability, Cost, and Schedule consequence descriptions.

#### 4. How likely is this risk scenario?. Locate the most accurate Likelihood Description that corresponds to the risk statement. Only one Likelihood Score is possible. Note: Quantitative likelihood ratings refer to program life, and are provided as guidelines only.

#### 5. Plot the Risk. Select the highest consequence score. Plot this against the ONE Likelihood Score on the RED/YELLOW/GREEN risk matrix.

| Consequence Rating |                 | 1                                 | 2                                                                                                        | 3                                                                                               | 4                                                                                                                                                                              | 5                                                                                                                                                                             |                                                                                                                                                                                  |
|--------------------|-----------------|-----------------------------------|----------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| TECHNICAL          | Safety          | Human Health                      | - Minor or First Aid Injury                                                                              | - Moderate injury, illness, incapacitation or impairment                                        | - Significant or long term, injury, illness, incapacitation or impairment                                                                                                      | - Permanent or major injury, impairment, or incapacitation                                                                                                                    | - Death                                                                                                                                                                          |
|                    |                 | System Safety                     | - Damage to Non-Flight-Critical Assets                                                                   | - Loss of non-flight critical assets                                                            | - Damage to major element(s) of flight vehicle or ground facility                                                                                                              | - Loss major element(s) of flight vehicle or ground facility                                                                                                                  | - Loss of Program                                                                                                                                                                |
|                    |                 | Environmental Safety              | - Minor environmental impact                                                                             | - Moderate Environmental Impact                                                                 | - Significant Environmental Impact                                                                                                                                             | - Major Environmental Impact                                                                                                                                                  | - Catastrophic Environmental impact                                                                                                                                              |
|                    |                 | HSE Compliance                    | - Minor Non-Compliance                                                                                   | - Moderate Non-Compliance                                                                       | - Significant Non-Compliance                                                                                                                                                   | - Major Non-Compliance                                                                                                                                                        | - Non Defined                                                                                                                                                                    |
|                    | Mission Success | Shuttle Operations                | - Minor increase in flight operations timeliness or complexity                                           | - Failure to achieve any planned SSP mission objective                                          | - Minimum Duration Flight (MDF)<br>- Significant increase in flight operations timeliness or complexity                                                                        | - Failure to achieve all Shuttle major mission objectives (MMO)<br>- Early Mission Termination<br>- Pad Abort or Intact Abort                                                 | - Contingency Abort                                                                                                                                                              |
|                    |                 | ISS Operations                    | - None Defined                                                                                           | - Failure to achieve any planned ISS mission objective                                          | - None Defined                                                                                                                                                                 | - Failure to support assembly critical ISS requirements                                                                                                                       | - Shuttle Crew Evacuation<br>- ISS evacuation                                                                                                                                    |
|                    |                 | SSP Developmental Activities      | - Failure to meet developmental requirements, Minor workarounds or temporary waivers required for flight | - None Defined                                                                                  | - Inability to complete Commit-to-Flight test, analysis or certification<br>- Failure to meet developmental requirements. Significant or permanent waivers required for flight | - Failure to meet key development requirements (e.g., performance)                                                                                                            | - None Defined                                                                                                                                                                   |
|                    | Supportability  | Capability to Maintain SSP Assets | - Temporary Usage Loss or LOCM of Non flight critical asset                                              | - Permanent Usage Loss or LOCM of non-flight critical asset                                     | - Temporary Usage Loss or LOCM, major elements(s) of flight vehicle or ground facility                                                                                         | - Permanent Usage Loss or LOCM of major element(s) of flight vehicle or ground facility                                                                                       | - Inability to support further Shuttle Flight operations                                                                                                                         |
|                    |                 | Flight Processing                 | - Collateral damage to non flight critical assets during processing                                      | - Moderate increase timeline or complexity                                                      | - Significant increase timeline or complexity                                                                                                                                  | - Collateral damage to major element(s) of flight vehicle or ground facility during processing                                                                                | - None Defined                                                                                                                                                                   |
|                    | PROGRAMMATIC    | Schedule                          | SSP/ISS Schedule                                                                                         | - Minor Operational Slips<br><br>- Less than 7 day slip in an SSP/ISS Freeze Point or milestone | - Greater than 7 day slip in an SSP/ISS Freeze Point or Milestone<br>- ISS hardware/software delivery date not met for on-orbit needs                                          | - 1 flight decrease from baselined manifest<br>- 1 mission increase in ISS assembly plan<br>- Flight delay occurring pre-FRR<br>- SSP/ISS milestone slip of more than 1 month | - 2 or more flight decrease from baselined manifest<br>- 2 or more mission increase in ISS assembly plan<br>- Flight delay after L-2<br>- Cannot achieve major SSP/ISS milestone |
| Cost               |                 | Risk Recovery Cost                | < \$1 M                                                                                                  | \$1 M - \$5 M                                                                                   | > \$5 M - \$15 M                                                                                                                                                               | > \$15 M - \$25 M                                                                                                                                                             | > \$25 M                                                                                                                                                                         |